1894MNRAS..54..314.

The above longitudes are referred to May 5 as a convenient epoch. The limiting Kronocentric latitudes have been kindly calculated by the Rev. A. Freeman from measures of two drawings of *Saturn* by means of the tables published by him in the *Monthly Notices*, vol. liv. p. 30.

Results of Micrometer Measures of Double Stars with the 12¾-inch Merz Refractor, at the Royal Observatory, Greenwich, during the year 1893.

(*Communicated by the Astronomer Royal.*)

Σ [OΣ]	Name.	R.A. 1900.	N.P.D. 1900.	Magnitude.		Position Angle.	Distance.	No. of nights.	Fraction of year 1893.
		h m	° ′			°	″		
180	γ Arietis	1 48·0	71 12	4·2	4·4	358·1	6·83	2	·097
305		2 41·7	60 10	7·3	8·2	317·1	2·83	1	·126
[82]		4 17·0	75 17	7·0	9·0	149·5	1·23	1	·170
535		4 18·0	78 52	6·7	8·2	324·7	1·17	2	·175
572		4 32·3	63 21	6·5	6·5	201·9	3·23	2	·128
577		4 35·4	52 41	7·7	7·7	71·6	1·64	2	·140
[92]		4 53·3	50 45	6·0	9·7	253·4	2·01	2	·184
[98]		5 2·4	81 39	6·0	6·8	188·6	1·05	4	·197
742		5 30·5	68 5	7·5	8·0	258·7	3·43	2	·205
749		5 30·9	63 9	7·1	7·2	167·4	1·14	2	·154
932		6 28·6	75 10	8·2	8·3	328·1	2·34	3	·184
[149]		6 30·3	62 38	6·5	9·0	284·3	0·88	2	·189
945		6 33·3	48 56	7·1	8·0	269·0	0·54	2	·240
982	38 Geminorum	6 49·0	76 42	5·4	7·7	160·7	6·77	2	·216
[165]	45 Geminorum	7 2·6	73 55	5·0	10·7	48·6	3·62	1	·285
1037		7 6·6	62 35	7·1	7·1	308·7	1·30	4	·159
[170]		7 12·2	80 31	7·5	7·5	112·4	0·74	3	·153
1066	δ Geminorum	7 14·2	67 50	3·2	8·2	206·8	7·37	2	·231
1074		7 15·4	89 25	7·8	8·2	144·4	0·75	2	·216
1081		7 18·1	68 21	7·5	8·5	226·4	1·69	2	·205
1104		7 24·9	104 47	6·5	8·0	328·3	2·23	2	·229
1110	Castor	7 28·2	57 54	2·7	3·7	227·6	...	1	·101 *
						229·6	5·67	4	·186
[175]		7 28·6	58 51	6·0	6·6	329·9	0·50	3	·249
[176]		7 33·3	89 15	7·3	9·3	209·8	1·43	2	·241
[177]		7 34·7	52 21	7·5	8·5	124·3	0·51	3	·241
1126	Piazzi VII. 170	7 34·8	84 33	7·2	7·5	142·5	1·12	4	·206

1894MNRAS..54..314.

Σ [OΣ]	Name.		R.A. 1900.	N.P.D. 1900.	Magnitude.		Position Angle.	Distance.	No. of nights.	Fraction of year 1893.	
			h m	° ′			°	″			
[182]			7 47·4	71 45	7·0	7·5	31·9	1·26	2	·194	
1157			7 49·8	92 31	8·0	8·0	...	0·89	1	·224	*
							257·3	0·88	2	·229	
[185]			7 52·2	88 35	6·8	7·0	17·3	0·36	2	·241	
1175			7 57·3	85 33	7·7	8·8	221·9	1·47	2	·228	
[187]			7 57·7	56 41	6·9	7·5	285·2	0·34	3	·238	
	β 581	A.B.	7 58·8	77 25	8·5	8·6	273·1	0·84	1	·309	
1187			8 3·2	57 27	7·1	8·0	45·8	2·17	4	·141	
1196	ζ Cancri	A.B.	8 6·5	72 3	5·0	5·7	26·5	1·05	2	·208	
	„	A.C.	...	...	5·0	5·5	116·0	5·23	2	·208	
	„	B.C.	...	...	5·7	5·5	131·3	5·17	2	·208	
1202	Piazzi VIII. 13		8 8·1	78 50	7·7	9·8	321·1	2·18	2	·211	
1211			8 11·1	50 52	9·1	9·6	309·7	0·74	2	·216	
1216			8 16·3	91 16	7·5	8·2	183·6	0·35	3	·245	
1223	ϕ^2 Cancri		8 20·7	62 44	6·0	6·5	217·0	4·35	2	·211	
1224	ν^1 Cancri		8 20·7	65 8	6·0	7·1	41·7	6·13	3	·243	
1228			8 21·6	62 5	8·3	8·9	350·4	9·27	2	·235	
1243			8 28·9	88 2	8·0	9·7	225·5	1·53	2	·246	
1263			8 38·5	47 55	7·6	8·2	20·2	49·91	1	·268	
1273	ε Hydræ		8 40·5	83 13	3·8	7·8	224·7	3·28	4	·240	
1291	57 Cancri		8 48·1	59 3	5·9	6·4	327·9	1·23	3	·244	
1300			8 54·7	74 20	8·7	8·8	200·1	5·17	2	·234	
3121			9 11·8	60 58	7·2	7·5	177·3	0·32	3	·265	
1333			9 12·2	54 13	6·6	6·9	226·0	1·68	2	·234	
1334	38 Lyncis		9 12·6	52 46	4·0	6·7	238·3	3·75	2	·244	
1338			9 14·6	51 23	7·0	7·2	165·7	1·52	2	·277	
[201]			9 17·9	61 33	7·5	9·0	226·5	...	1	·271	*
							219·5	1·50	2	·270	
1348			9 19·3	83 13	7·5	7·6	324·5	1·40	3	·260	
1355			9 22·1	83 19	7·2	7·2	333·8	2·30	3	·287	
1356	ω Leonis		9 23·1	80 30	6·2	7·0	109·2	0·50	2	·274	
1374			9 35·1	50 35	6·8	8·0	283·4	3·62	3	·300	
1389			9 46·7	62 32	8·2	9·0	317·1	2·15	2	·304	
1406			9 59·8	58 26	8·0	8·7	225·7	1·19	2	·303	
[215]	Piazzi X. 23		10 10·5	71 45	7·0	7·2	209·5	0·95	2	·268	
1424	γ Leonis		10 14·5	69 36	2·0	3·5	115·0	3·73	4	·301	
1429			10 19·5	64 52	8·2	8·2	250·6	1·19	2	·268	
[218]			10 22·1	85 54	7·3	9·2	90	0·3	1	·293	

1894MNRAS..54..314.

Σ [OΣ]	Name.	R.A. 1900.	N.P.D. 1900.	Magnitude.		Position Angle.	Distance.	No. of nights.	Fraction of year 1893.
		h m	° ′			°	″		
1439		10 24·6	68 41	8·0	8·5	118·4	1·62	3	·305
1450	49 Leonis	10 29·8	80 49	6·0	8·7	157·8	2·41	4	·324
1457		10 33·6	83 45	7·6	8·5	316·3	0·96	3	·342
[224]	Piazzi X. 128	10 34·5	80 39	7·2	9·2	306·0	0·61	2	·305
[228]		10 41·9	66 54	7·2	8·1	198·6	0·77	2	·385
[229]		10 42·2	48 21	6·7	7·1	330·4	0·67	2	·335
1476		10 44·2	93 28	7·2	8·0	6·6	1·98	1	·353
1504	Piazzi X. 229	10 59·0	85 50	7·5	7·6	290·4	1·10	2	·349
1517	Piazzi XI. 9	11 8·6	69 20	7·3	7·0	275·1	0·68	1	·361
1523	ξ Ursæ Maj.	11 12·8	57 54	4·0	4·9	187·7	1·76	4	·345
1527		11 13·8	75 11	7·0	8·0	18·5	3·73	3	·411
1534		11 16·7	71 16	8·0	11·2	...	5·36	1	·370 *
						324·7	5·61	1	·370
1536	*i* Leonis	11 18·7	78 55	3·9	7·1	59·6	2·55	2	·383
1555	Piazzi XI. 111	11 31·0	61 40	6·4	6·8	356·8	0·48	3	·347
[237]		11 33·7	48 18	7·4	9·0	266·4	1·21	3	·416
1606		12 5·8	49 33	6·3	7·0	335·7	1·07	3	·361
[250]		12 20·1	46 22	7·7	8·0	331·4	0·42	5	·376
1643		12 22·3	62 25	8·0	8·3	41·7	2·01	2	·357
1647		12 25·6	79 44	7·5	7·8	219·6	1·32	2	·363
1658	A.B.	12 30·1	82 0	8·0	9·8	358·3	2·98	2	·335
1658	A.C.	12 30·1	82 0	...		280·1	0·27	2	·335
1663		12 32·3	68 15	7·8	8·7	112·4	0·77	2	·358
1670	γ Virginis	12 36·7	90 54	3·0	3·0	151·7	5·86	2	·319
1687	35 Comæ	12 48·4	68 12	5·0	7·8	73·1	1·49	3	·371
[256]		12 51·4	90 25	7·2	7·6	267·5	0·39	2	·418
1728	42 Comæ	13 5·1	71 57	6·0	6·0	199·5	0·47	2	·409
[261]		13 7·5	57 24	6·9	7·4	344·2	1·42	3	·419
1734		13 15·6	86 33	7·2	7·9	195·0	1·15	2	·460
1742		13 19·3	88 4	7·4	7·9	349·4	1·42	1	·463
[266]		13 23·5	73 46	7·3	7·8	335·3	1·54	2	·387
1757	Piazzi XIII. 127	13 29·2	89 48	7·8	8·9	80·0	2·63	2	·415
1777	84 Virginis	13 38·0	85 57	5·8	8·2	233·8	3·18	2	·427
1781		13 41·2	84 23	7·8	8·2	278·7	1·32	3	·462
	β 612	13 34·8	78 42	6·4	6·5	193·1	0·39	1	·468
1808		14 5·3	62 56	8·2	9·0	71·9	3·71	1	·463
1819		14 10·3	86 26	7·9	8·0	4·7	1·12	1	·468
1834		14 16·6	41 1	7·1	7·2	145·5	0·39	1	·468

1894MNRAS..54..314.

Σ [OΣ]	Name.	R.A. 1900.	N.P.D. 1900.	Magnitude.		Position Angle.	Distance.	No. of nights.	Fraction of year 1893.
		h m	° ′			°	″		
1865	ζ Bootis	14 36·4	75 31	3·5	3·9	105·4	0·52	3	·488
1867		14 36·7	58 17	7·7	8·2	15·2	1·43	3	·455
1877	ε Bootis	14 40·6	62 30	3·0	6·3	328·8	2·63	2	·488
1888	ξ Bootis	14 46·7	70 29	4·7	6·6	235·5	3·70	4	·457
	β 31	14 7·8	70 52	8·4	9·7	196·3	1·87	4	·464
[287]		14 47·9	44 40	7·5	7·6	321·8	0·94	1	·493
[288]		14 48·5	73 53	6·4	7·1	191·3	1·68	2	·470
1932		15 14·1	87 52	5·6	6·1	137·3	0·92	2	·497
1937	η Coronæ	15 19·0	59 21	5·2	5·7	245·3	0·85	3	·497
1938	Piazzi-XV. 74	15 20·8	52 18	6·7	7·3	82·9	1·26	1	·501
[296]		15 23·1	45 40	7·0	8·6	310·5	1·55	2	·479
1954	δ Serpentis	15 30·0	79 9	3·2	4·3	187·3	4·12	1	·496
[298]		15 32·5	49 52	7·0	7·3	170·6	1·03	1	·457
[303]		15 56·1	76 26	7·4	7·9	137·5	...	1	·466 *
						135·2	0·56	1	·466
2140	α Herculis	17 10·1	75 30	3·0	6·1	121·0	4·87	1	·731†
2203		17 38·3	48 17	7·5	7·8	328·2	0·93	1	·690
2215		17 41·1	72 15	5·9	7·9	164·1	0·39	1	·690
2272	70 Ophiuchi	18 0·4	87 28	4·1	6·1	308·9	2·34	1	·690

The measures were made with a position-micrometer on the 12¾-inch Merz refractor, which is mounted on the Lassell equatorial. In general the power of the eye-piece used was 412.

The measures were made, except where specially noted, by Mr. Lewis.

Measures marked * were made by Mr. Turner, those marked † by Mr. Edney.

The approximate positions are for the year 1900, and the magnitudes have been taken from Struve and Otto Struve.

Royal Observatory, Greenwich :
1894 *March* 9.

1894MNRAS..54..314.

New Orbit of 9 *Argûs*, *β* 101. By Professor S. Glasenapp.

(*Communicated by T. Lewis.*)

In the article "Orbit of 9 *Argûs*, *β* 101," published in vol. lii. No. 8 of the *Monthly Notices of the Royal Astronomical Society*, I have communicated the elements of this close double star. These elements present a fairly good agreement with the observations, especially for the angles of position, but in the distances the last observation (0″·22) gives a discordance of 0″·16 with the calculated distance, which is 0″·38.

This circumstance was mentioned by Mr. S. W. Burnham, M.A., in an article published in the journal *Astronomy and Astrophysics*, No. 116; where, supposing that the position of the satellite for the year 1875 must be changed as follows—

instead of	1875·71 $\theta = 289^\circ{\cdot}7$ $\rho = 0''{\cdot}46$
it must be	1875·27 $\theta = 289^\circ{\cdot}7$ $\rho = 0''{\cdot}58$

he draws another ellipse with a larger eccentricity. I admit that these corrections made by Mr. Burnham are very probable. If we adopt them, and take his apparent ellipse, we obtain a new set of elements; if, then, we determine their corrections by the method of least squares, we obtain the following most probable elements of 9 *Argûs*:—

$T = 1892{\cdot}27$ $\lambda = 73^\circ{\cdot}70$

$P = 23{\cdot}33$ years $i = 77^\circ{\cdot}73$

$n = +15^\circ{\cdot}430$ $e = 0{\cdot}668$ $(\phi = 41^\circ{\cdot}943)$

$\Omega = 97^\circ{\cdot}54$ $a = 0''{\cdot}60$

I give in the next table the comparison of these elements with the observations (see the above-mentioned note in the M.N.):—

t	θ_o	θ_c	$\theta_o - \theta_c$	ρ_o	ρ_c	$\rho_o - \rho_c$
	°	°	°	″	″	″
1875·24	289·7	290·0	−0·3	0·58	0·58	0·00
78·50	302·2	300·0	+2·2	0·45	0·48	−0·03
79·68	306·2	305·1	+1·1	0·38	0·42	−0·04
82·21	319·7	323·4	−3·7	0·35	0·29	+0·06
83·11	336·2	334·6	+1·6	0·30	0·24	+0·06
89·08	76·4	76·0	+0·4	0·34	0·32	+0·02
90·22	83·8	84·7	−0·9	0·34	0·35	−0·01
91·06	91·5	90·6	+0·9	0·34	0·34	0
92·05	98·7	100·1	−1·4	0·22	0·25	−003